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On motion of Dr. Le Conte, the Librarian was instructed to furnish a statement of the list of exchanges of the Society, and the value thereof.

The Reporter laid upon the table No. 59 of the Proceedings of the Society, which has been recently published.

Stated Meeting, October 1, 1858.

Present, fourteen members.

Prof. CRESSON, Vice-President, in the Chair.

Letters were read:—

From the Society of the Museum of Natural History, of Strasbourg, dated March 5, 1857, acknowledging the receipt of Nos. 53 and 54 of the Proceedings of this Society:—

From the Literary and Philosophical Society of Manchester, without date, returning thanks for Vol. XI. Part 1, of the Transactions, and Nos. 55 and 56 of the Proceedings:—

From the Connecticut Historical Society, dated Hartford, Sept. 23; from the Corporation of Yale College, dated New Haven, Sept. 24; and from the Academy of Science of St. Louis, dated Sept. 24, 1858, severally containing acknowledgments for No. 59 of the Proceedings: and—

From Prof. Zantedeschi, dated Padua, Sept. 9, 1858, in relation to the mode of forwarding letters and communications to him.

The following donations were announced:—

FOR THE LIBRARY.

Forty-third Annual Report, American Asylum for Deaf and Dumb.

Hartford, 1858. (60 pages.) 8vo.—*From the Conn. Hist. Soc.*

Thirty-fourth Ann. Report, Retreat for the Insane.—*From the same.* History of the Indian Tribes, by H. R. Schoolcraft. Part VI. of the Series. Phila. 1857. (754 pp.) 4to.—*From Commiss. C. E. Mix.*

Principles of Social Science. Vol. II. By H. C. Carey. Philadelphia, 1858. 8vo.—*From the Author.*

Quarterly Journal, Chem. Soc. XI. 2. London, 1858. 8vo.

Letter to the Majority of the Trustees of the Dudley Observatory, by an Observer. Albany, 1858. 8vo.

Journal Soc. Arts. VI. 276-279. London, 1858. 8vo.

The committee to which was referred the paper of Mr. Chase, read at the last meeting, made request that Prof. Haldeman be added to the committee, which was agreed to.

The committee appointed on the 7th of May last, on the subject of further Arctic explorations, by Dr. I. I. Hayes, made the following report:—

The committee to whom was referred the subject of the Arctic exploration proposed by Dr. I. I. Hayes, respectfully report,—

That, beside any reflections of their own upon that subject, they find in previous proceedings of the Society ample warrant for the opinion, that the verification of the alleged open sea about the north pole, and the probable contributions to be made from that region of the earth to the collections of science, constitute sufficient reasons for an earnest interest on the part of the Society, in any reasonable attempt to complete our knowledge in these respects by further exploration. After the signal manifestations which have been given by men of science throughout the world, of their estimate of the importance of circumpolar discovery; and with the advantage of recent reports, from a high latitude, received from our lamented fellow member, the late Dr. Kane, whose efforts were accompanied by warm solicitude on the part of the Society, your committee have believed it proper to confine themselves to a consideration of the grounds upon which Dr. Hayes rests his conviction of the practicability and seasonableness of his proposal. These have been already briefly submitted to the American Association for the Advancement of Science, and have received a very prompt acceptance by that body, the members of which referred the subject to a committee, with instructions to cooperate with Dr. Hayes. They have been also published through the Smithsonian Institution, at an invitation from which, Dr. Hayes announced them in one of the lectures of its last course. Nevertheless, your committee think proper to mention the principal of them as forming the basis of their own conclusion, that the proposal in question is sustained by sufficient evidence of its feasibility to engage the continued attention of the Society.

It is well known that one result of voyages of exploration prior to that of Dr. Kane, was the establishment of an opinion that a barrier

of ice surrounded the pole; and that in order to reach open water, if such existed, a way must be found through, or over, the barrier. Dr. Kane, after an intelligent consideration of the discoveries already reported, aided by the illustrations derived from his personal observation during his first visit to the Arctic circle, concluded that the most practicable course lay up Smith's Strait, which he accordingly followed upon his second voyage. The difficulties encountered by him were such, that after many gallant efforts, he was compelled to return to the United States without becoming an eye witness to the physical condition of the region towards which his labours tended. It seemed therefore proper for your committee to inquire whether those difficulties were clearly of so constant a nature in relation to all similar attempts, as to render it prudent on the part of the Society to avoid encouragement of a project which his experience may have shown to be impracticable. It appears that the most important impediments to his complete success were—Ist. The arresting of his vessel and her permanent confinement by the ice, in a situation which was unfavourable to the efforts of his exploring parties. This occurred in a bay to the south of Kennedy channel, with an exposure to the main pressure of ice, which accumulated in hummocks on the north of his position; and thus the labour necessary to any exploration towards the pole, was in disproportion to the strength of his crew, and the resources at his command. On the west side of the channel, under the cover of the projecting land visited by Dr. Hayes (to the most prominent point of which the name Cape Frazer was given), the ice is reported as free from the impediments above stated; and a good harbour is reported to exist for wintering a ship, with egress by the opening of the channel, or through leads in the ice during the Arctic summer. The account published by Dr. Kane, shows how large a proportion of the sufferings and disappointments of his exploring parties was due to the position into which he was forced.

2d. The want of fresh provisions. The unavoidable delay of Dr. Kane's departure from New York beyond the period proposed by him, prevented his collecting, near the Danish settlements in Greenland, the fresh stores which abound in that neighbourhood. Originally contemplating a single year's work, he was detained beyond his expectation, with scanty supplies, until his men, worn out by excessive labour and restricted mainly to a salt diet, became the victims of fearful assaults of scurvy. His narrative shows how much of his disappointment is due to this cause. His dogs, indispensable auxiliaries, were unable to subsist upon salted meats; and thus the entire

stress of the work fell upon an ill-conditioned ship's company. Dr. Hayes proposes to give two years to his exploration. The first of these he designs to employ in reaching his head quarters at or near Cape Frazer; and in establishing thence northward, on the west side of Kennedy channel, secure depôts of provisions, as far as the latitude assigned by Morton to the open water reported by him, or further, if necessary; and in explorations preliminary to the main attempt. The second year, or such portion of it as may be sufficient, Dr. Hayes appropriates to the ascertainment of the condition of the polar adjacencies, and to such observations as may be most important to science. Thus the expedition of Dr. Kane, which may seem to discourage further attempts in the same direction, is viewed by Dr. Hayes as really furnishing the knowledge which promises final success. Your committee concur in this view.

In such circumstances, your committee cannot doubt that it is proper for the American Philosophical Society to co-operate with Dr. Hayes, in such manner as may be conformable with its usages in like cases; and especially to give to him the benefit of such systematic instruction as may best further the general purposes of the Society in the discovery and diffusion of useful knowledge.

Your committee respectfully submit the following resolution:—

Resolved, That a committee of nine members of the Society be appointed to co-operate with Dr. Hayes in his proposed extension of Arctic exploration, and to give to him, on the part of the Society, such instructions as may best promote its objects.

All of which is respectfully submitted.

The resolution accompanying the report was adopted, and the presiding officer authorized to appoint the committee, and announce it at a future meeting.

Mr. Justice referred to the comet which is now visible, and inquired whether any of the members had observed prismatic colours in the *coma*; stating that he thought he had distinctly observed a greenish hue, tinged with rose-colour, on several occasions.

Prof. Cresson remarked that he had observed a reddish tinge; and other members spoke of the appearances presented during their observations of the comet.

Mr. Lesley called the attention of the members to some specimens of photo-lithography, executed by Mr. Rehn, of Phila-

delphia, from photographic impressions made directly upon the stone. Mr. L. referred to the uses to which this process may be applied; its fidelity, and its cheapness as compared with other modes of obtaining copies of objects in natural history, and for other purposes.

A vacancy having occurred in the committee on the bequest of the late F. A. Michaux, by the death of Judge Kane, it was resolved that Judge King be appointed in his place, and that the committee be directed to communicate with M. Hector Bossange, of Paris, in relation to the legacy bequeathed to the Society by M. Michaux.

Stated Meeting, October 15, 1858.

Present, twenty-one members.

Prof. CRESSON, Vice-President, in the Chair.

Letters were read:—

From the Department of State, dated Washington, Oct. 9, 1858, accompanying a donation for the Library of the Society: and—

From the Historical Society of Massachusetts, dated Boston, Oct. 1, 1858, acknowledging the receipt of the Society's Proceedings, No. 59.

The following donations were announced:—

FOR THE LIBRARY.

Paraguay and Uruguay Sheet Maps. Nos. 8, 9, 1, 2, and reference chart.—*From the U. S. Navy Department.*

American Journal Med. Sci. Oct. 1858, and

Medical News, No. 190.—*From Blanchard & Lea.*

Diocesan Miss. Soc. First, Fourth and Fifth Annual Meetings.

Philadelphia, 1853'4'7'8. 8vo.—*From Jas. J. Barclay.*

Episcopal Miss. Ass. for the West. Annual Reports for 1856'8. 8vo.

Hospital of the P. Epis. Church. Annual Reports for 1856'7'8. 8vo.

Appeal of the Friends in behalf of the Coloured Races. Philadelphia, 1858. (48 pages.) 8vo.—*From the same.*